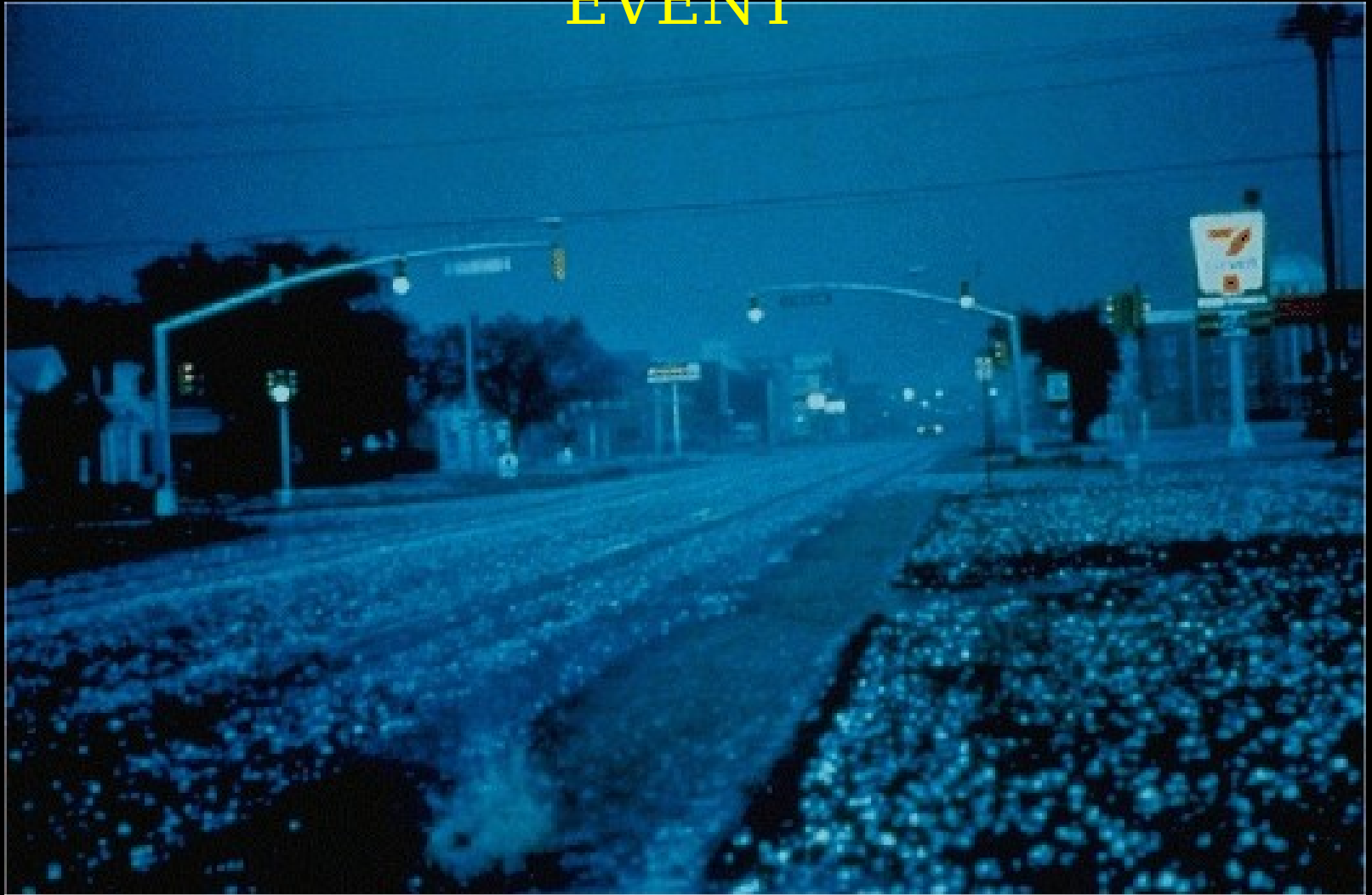
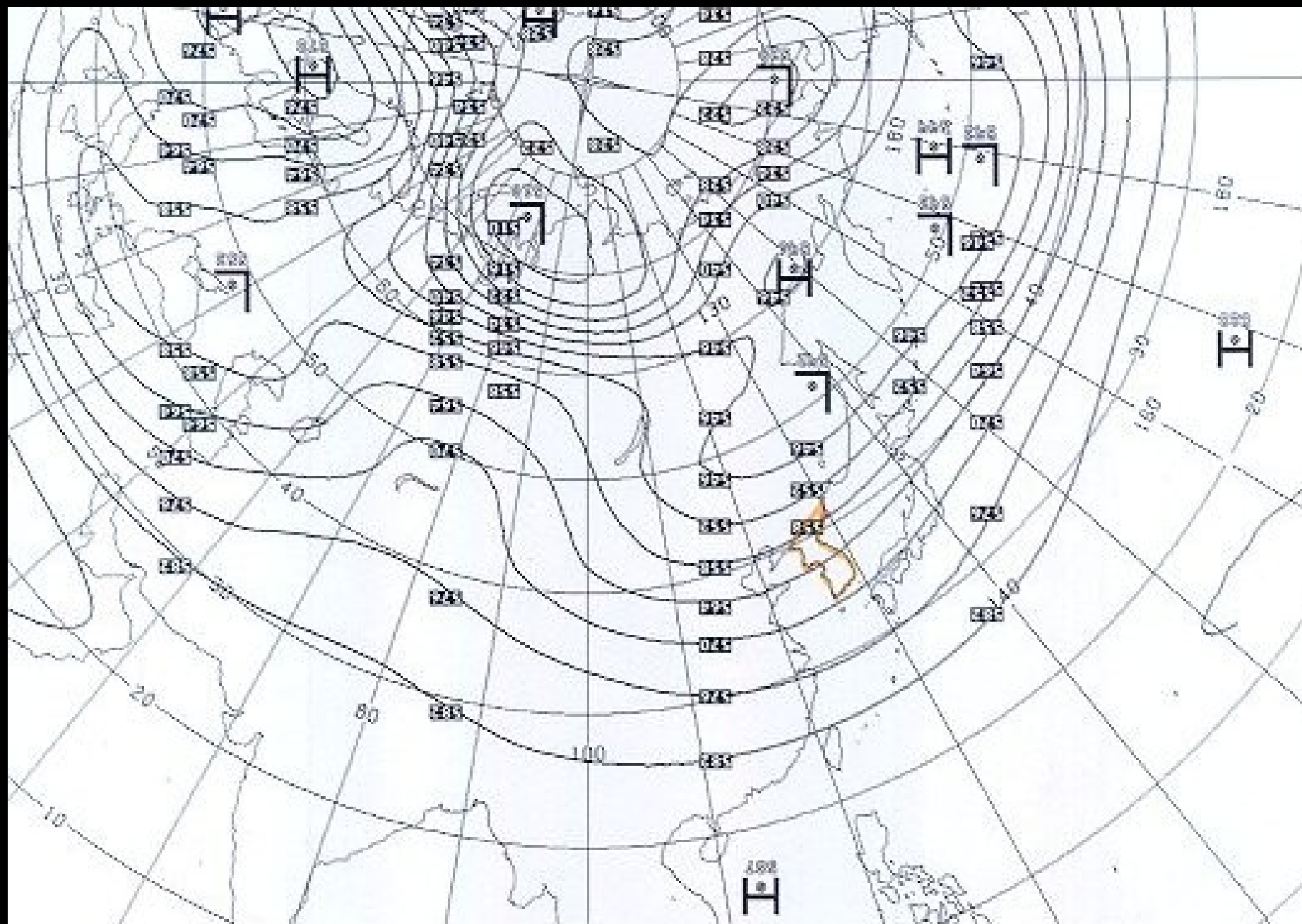


REVIEW of 09 MAY 2001 CAMP PAGE HAIL EVENT

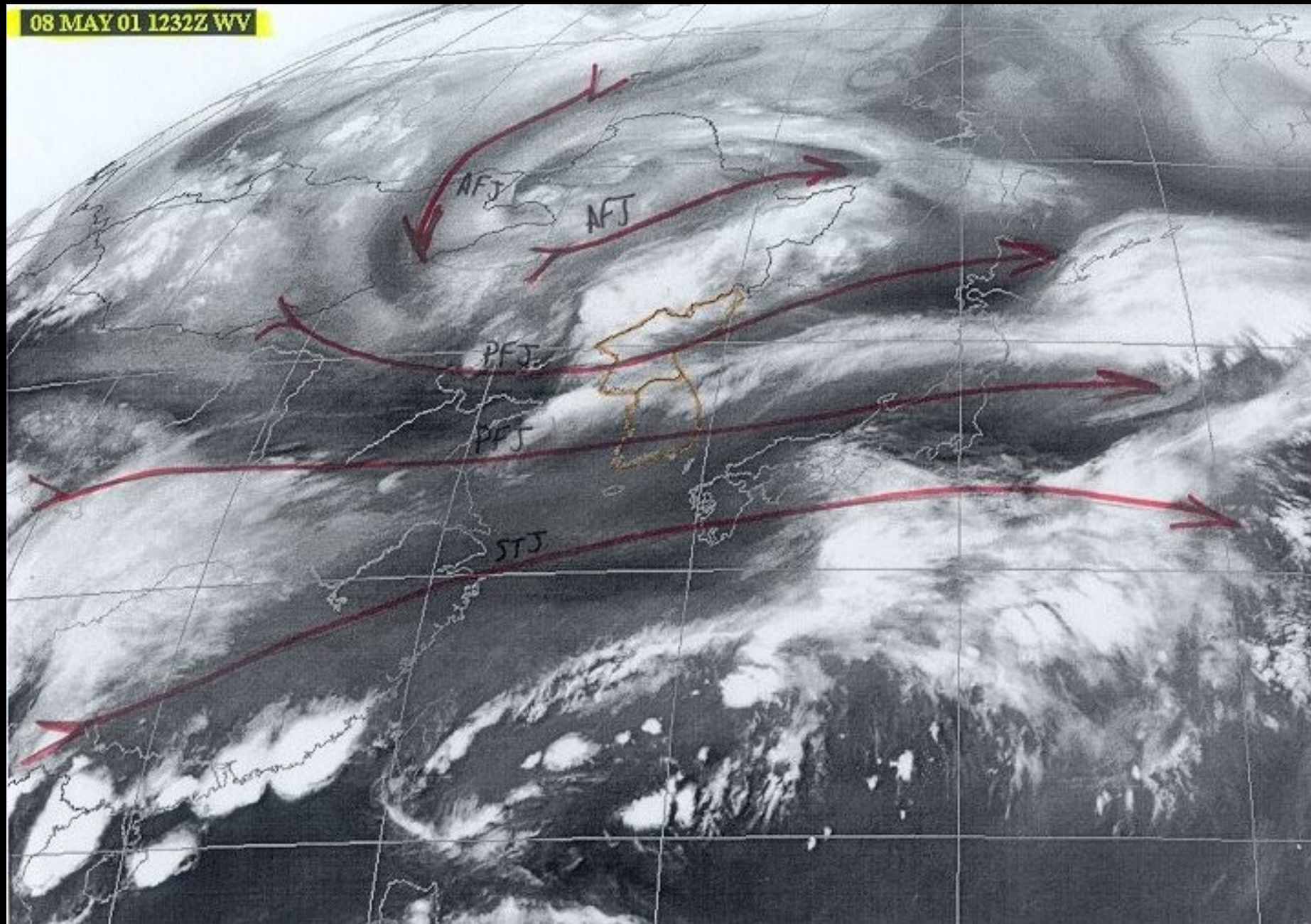


Presented by 1st Lt Mike Lewis, C Flight, 607th Weather Squadron Theater
Forecast Unit



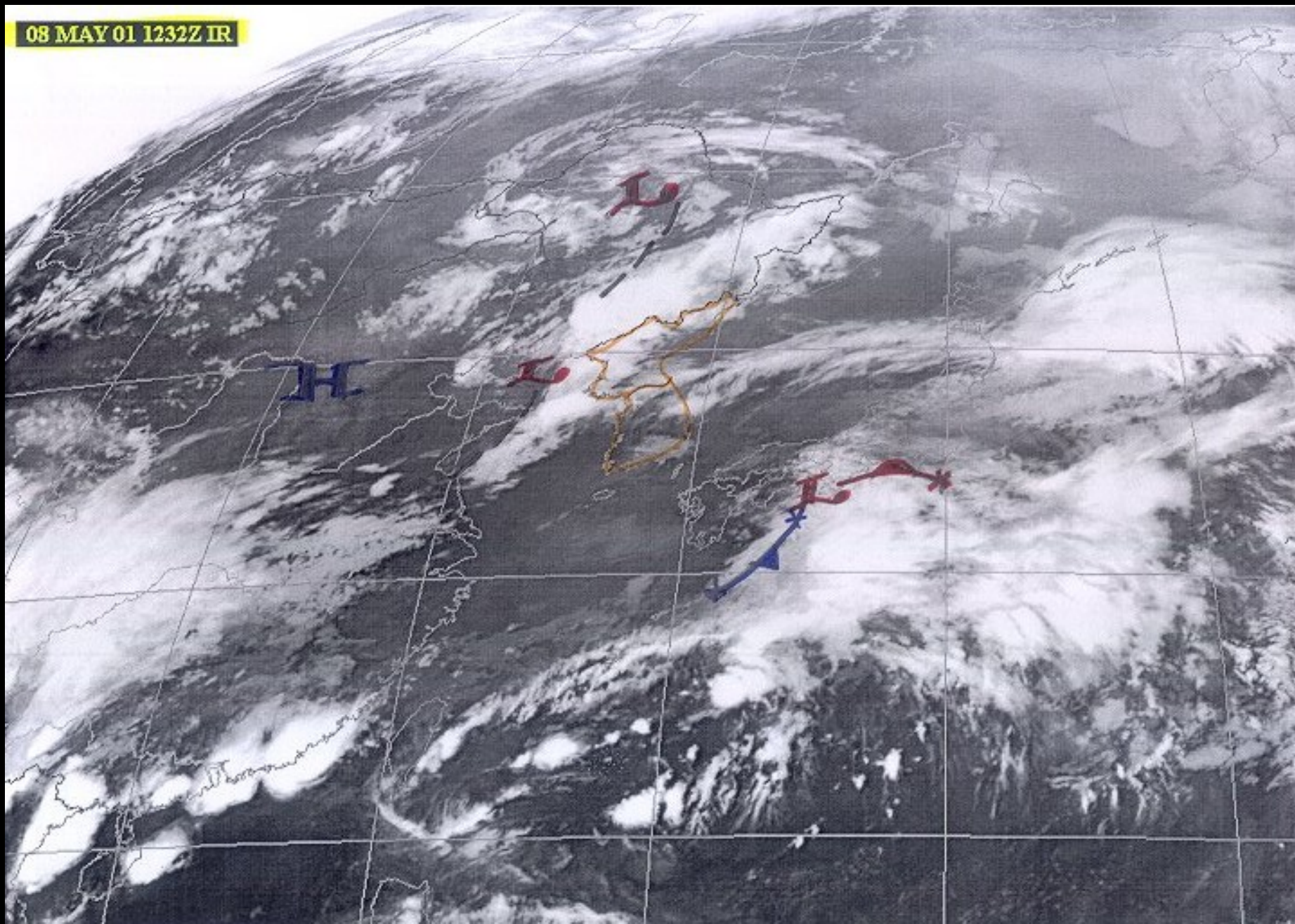
Analysis of the 08/00Z longwave pattern indicates low zonal flow with the longwave trof over China and longwave ridge over the Lake Baikal region.

08 MAY 01 1232Z WV

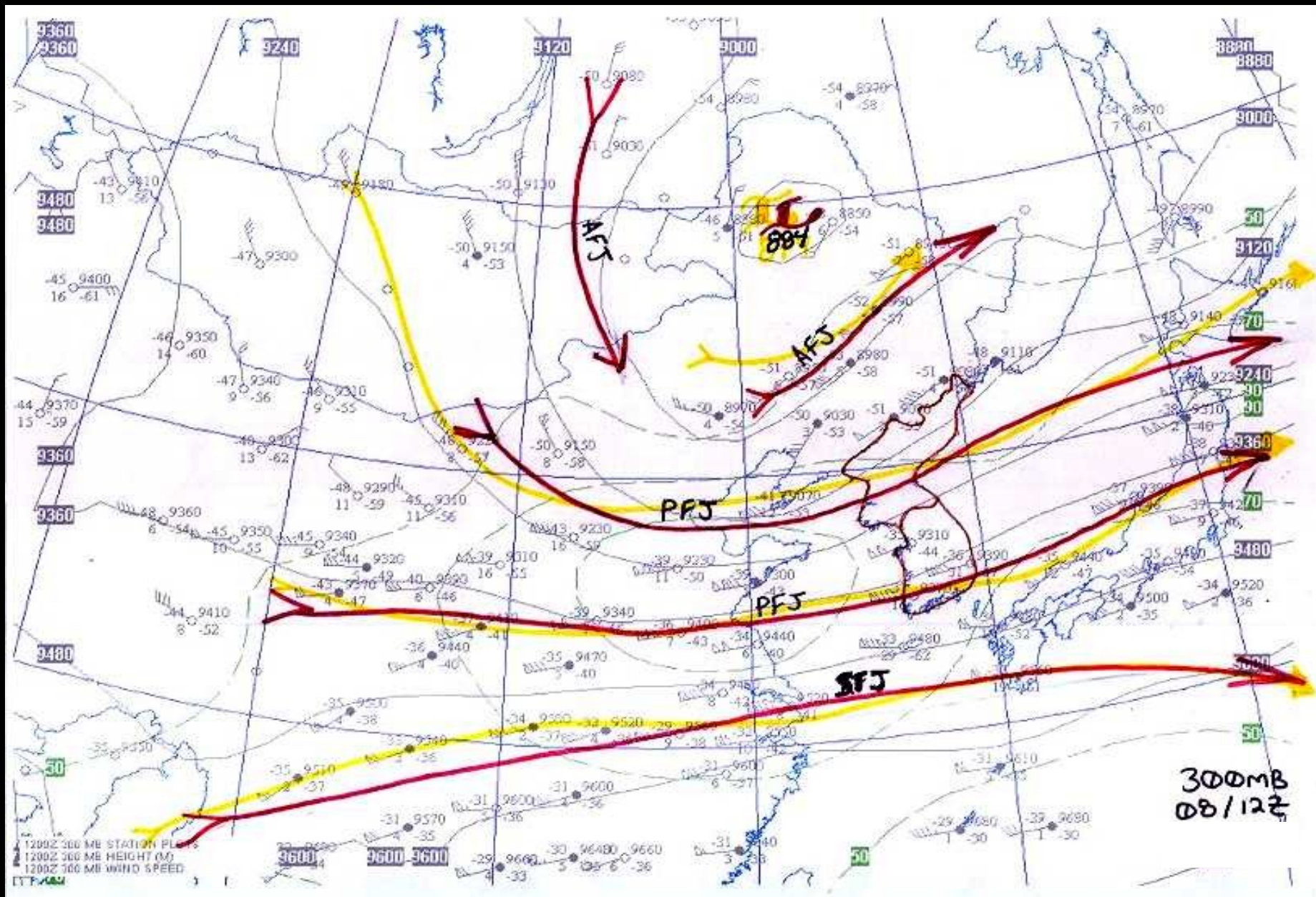


08/12Z water vapor analysis showing main branch of the PFJ over nKor. The branch extending through the ROK is extraneous and is actually a shared energy area between the

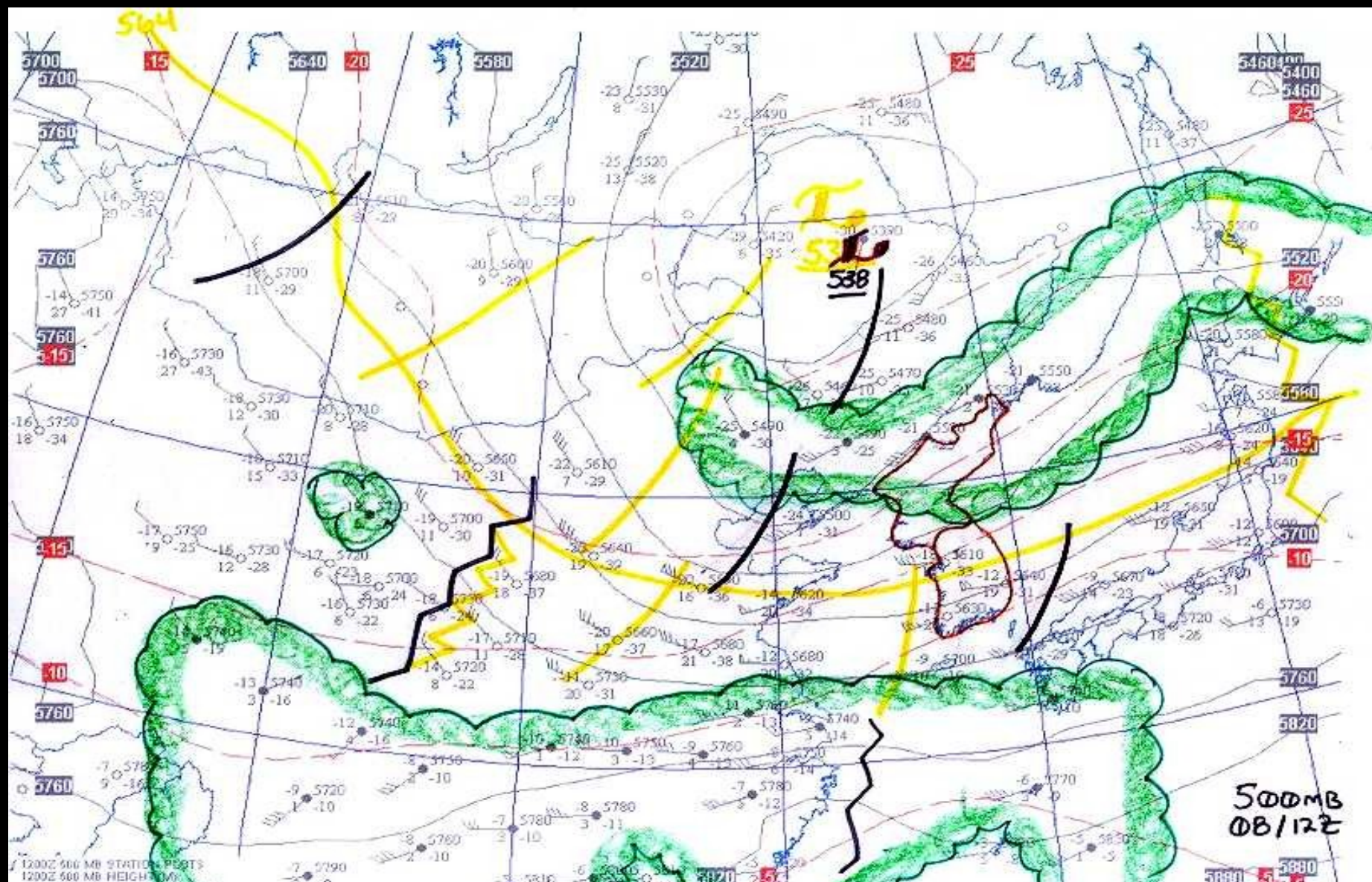
08 MAY 01 1232Z IR



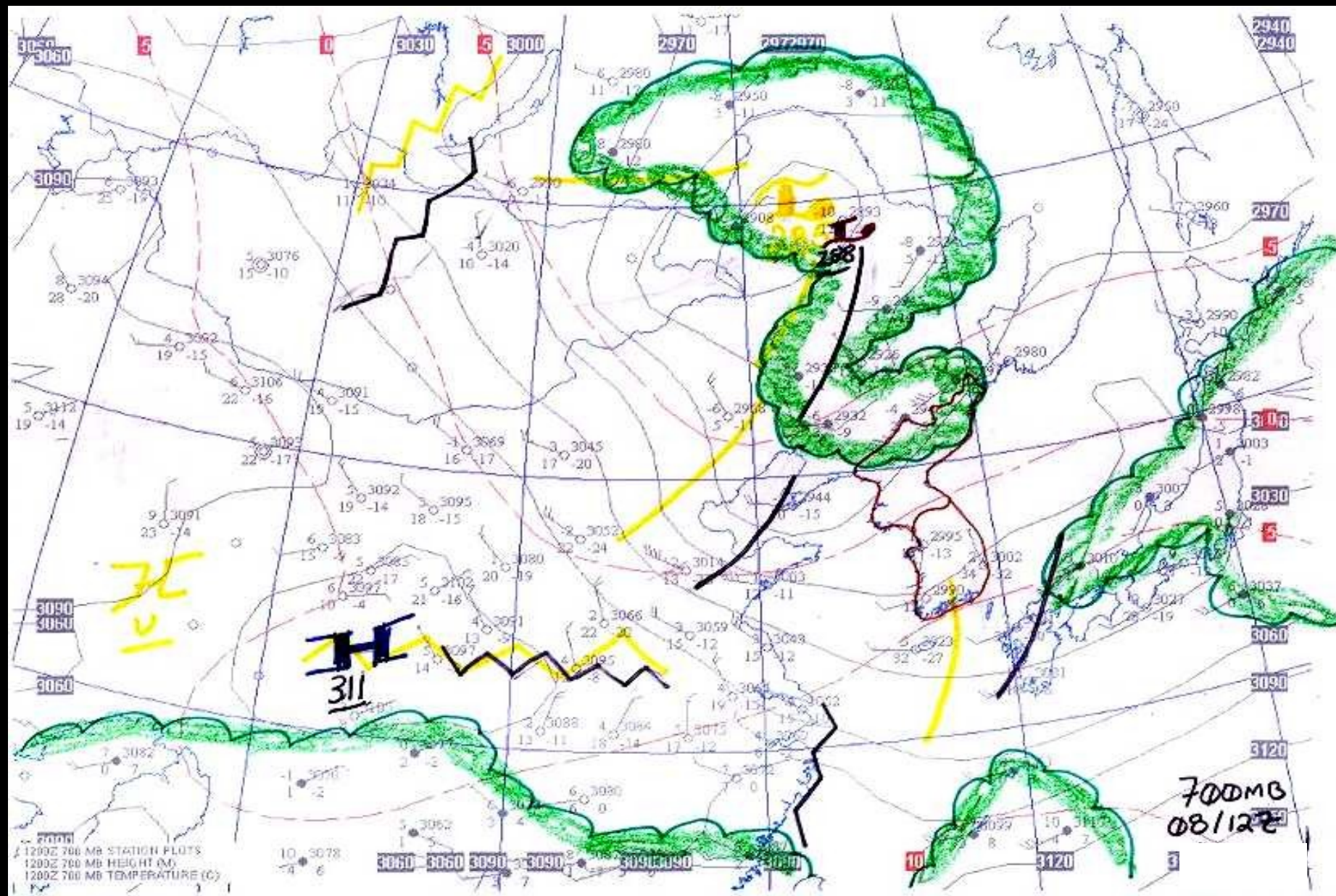
08/12Z IR analysis showing decaying wave over Manchuria and the developing low over the Gulf of Bohai



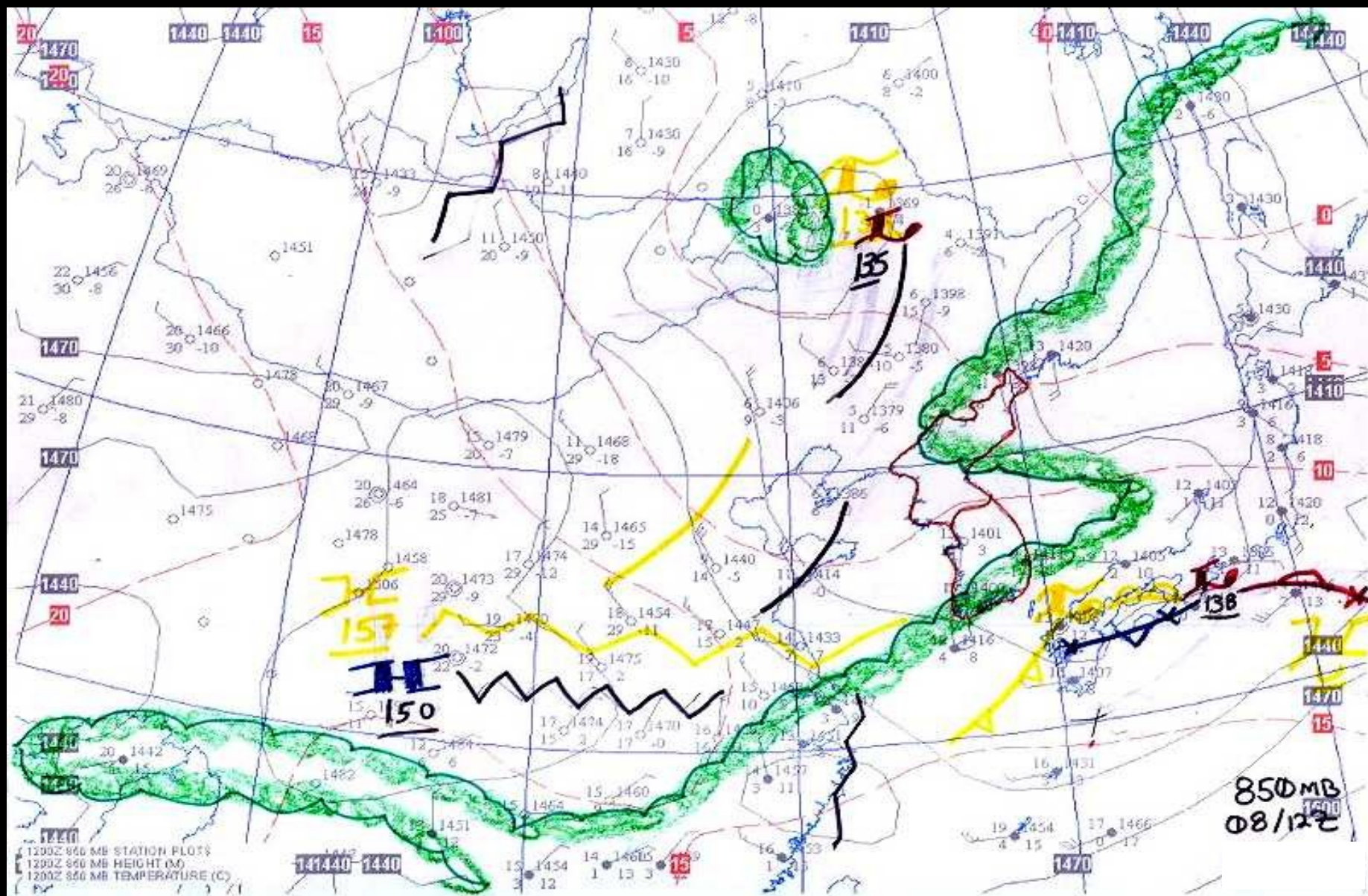
300mb pattern indicates strong winds aloft, with maximal winds to the west of the peninsula. The PFJ branch over the ROK is an analysis error. Higher winds in that area are the result of shared energy between the PFJ and STJ. Note the strong divergence



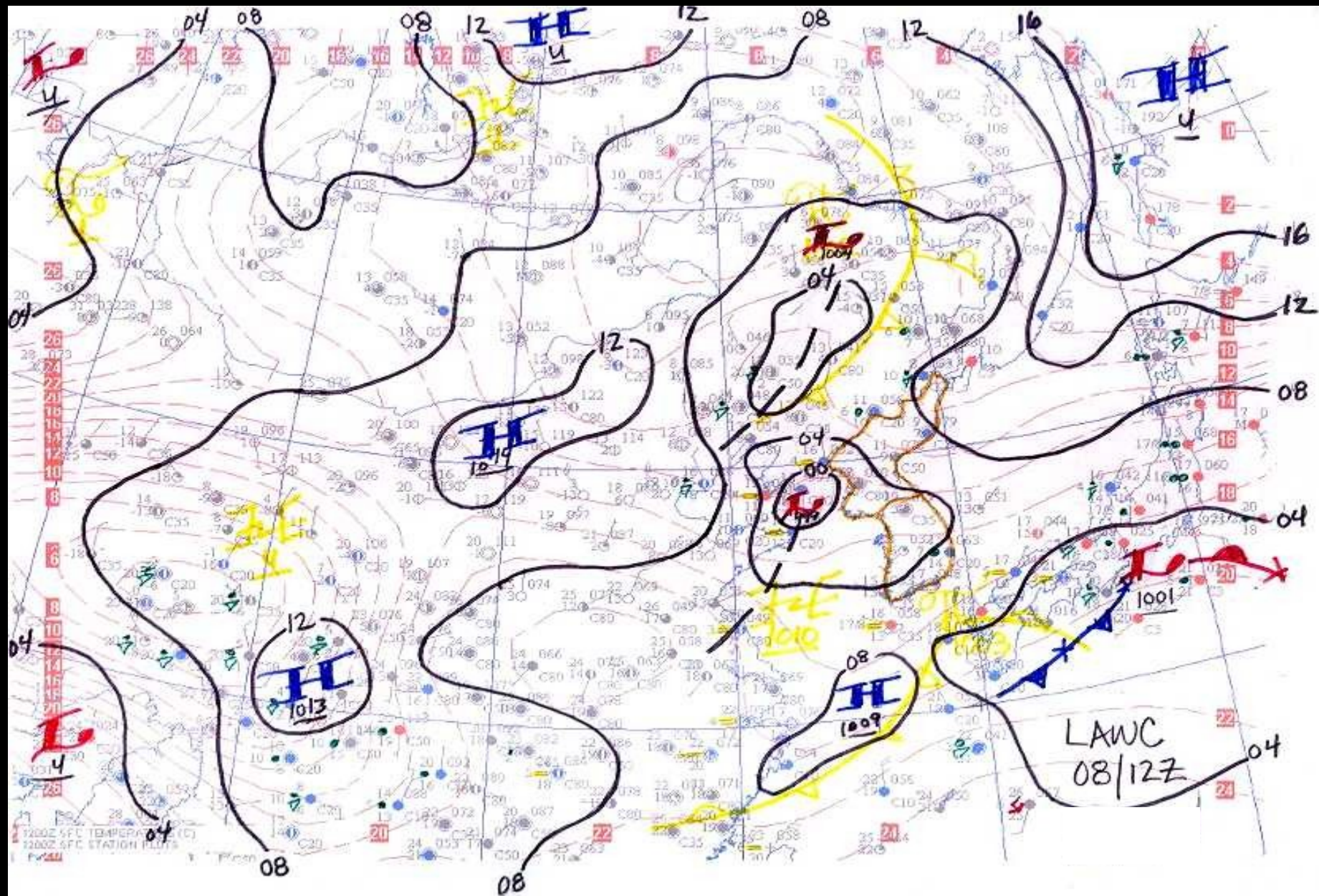
500mb analysis indicates a major shortwave trof near the Shantung peninsula and although continuity shows a decrease in amplitude, METSAT analysis showed triple-point cyclogenesis which is indicative of increased divergence aloft. There is significant cold air advection upstream, with a temperature difference of more than 6 degrees between the western ROK and



700mb analysis indicates drier air upstream of the approaching trof, which is now over the Shantung peninsula. Note that the dry intrusion of 40kts, roughly 90 degrees normal to the trough



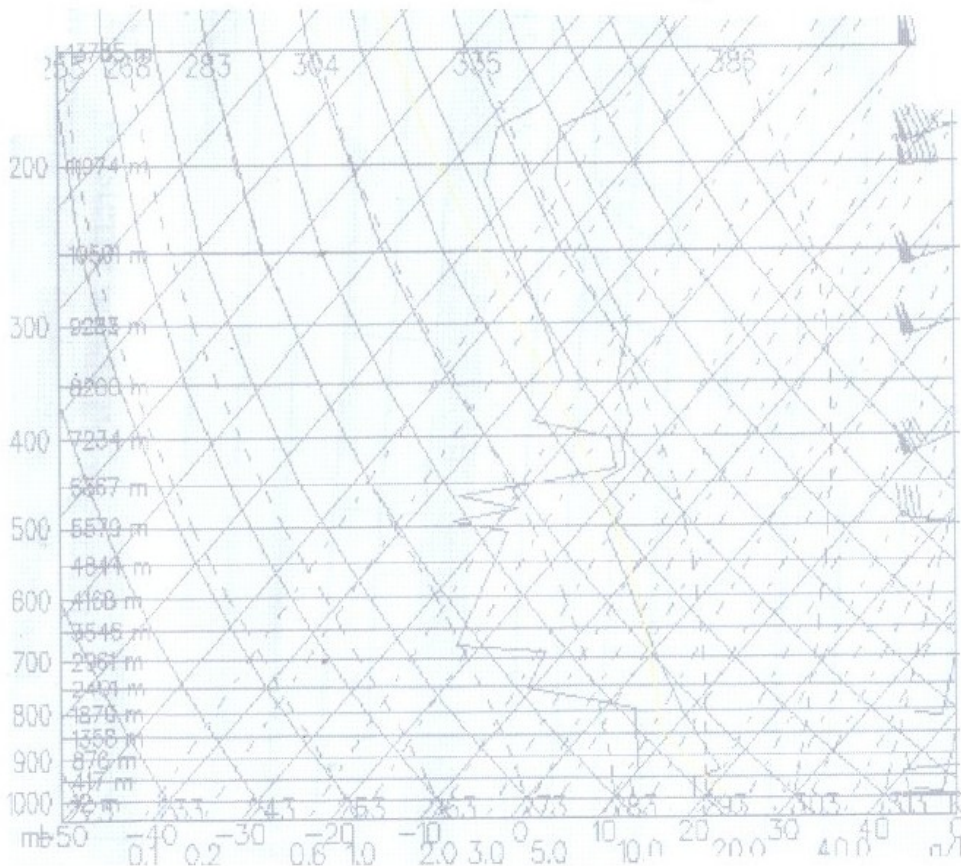
850mb analysis shows a fair amount of moisture over the southern ROK, with weak WAA into the area. Close analysis reveals a thermal ridge west of the axis of maximum moisture advection, which helped to further destabilize the AO. Note that an upper front was omitted from the analysis.



08/12Z sfc analysis indicates the low entering the northern portion of the West Sea, with a trof extending Southwestward into eastern China. Reanalysis shows the low north of nKorea was a decaying wave with a new unstable wave (and associated frontal system) moving into the West

PKSC 47122 Sounding

1200Z 8 MAY 01



WMO:47122
 TP:183
 MW:150
 FRZ:688
 WBZ:762
 PW:0.86
 RH:419
 MAXT:26.2
 TH:5567
 L57:6.9
 LCL:898
 LI:-0.4
 SK:-0.9
 TT:53
 KE23
 SW:213
 EL-13
 -PARCEL-
 CAPE:86
 CNH:213
 LCL:841
 CAP:3.8
 LFC:636
 EL:486
 MPL:416
 -WIND-
 STM:282/13
 HEL:22
 SHR:0.0
 SRDS:34
 EH:0.0
 BRN:3.8
 BSHR:23

Skew-T Indices of Note

LI: -0.4

WBZ: 8200 feet

CCL: 6600 feet

CAPE: 86

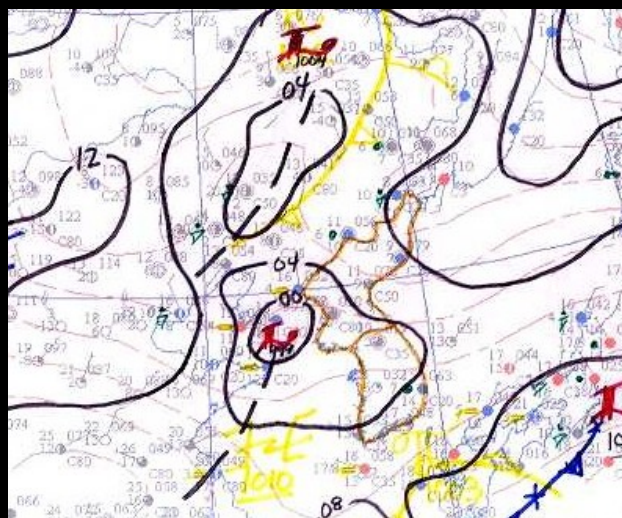
LCL: 3200 feet

LFC: 6600 feet

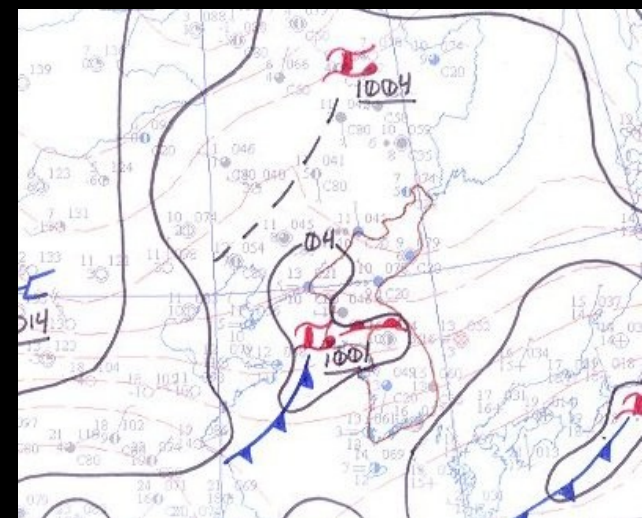
08/12Z Skew-T indicates a conditionally unstable atmosphere with moderate exhaust potential at the upper levels, with dry air at 700mb and veering (WAA/directional shear) in the low to mid levels. Southerly winds in the low levels persisted through the night, allowing for warm, moist air to continue feeding into the area beneath the cooler, drier air.



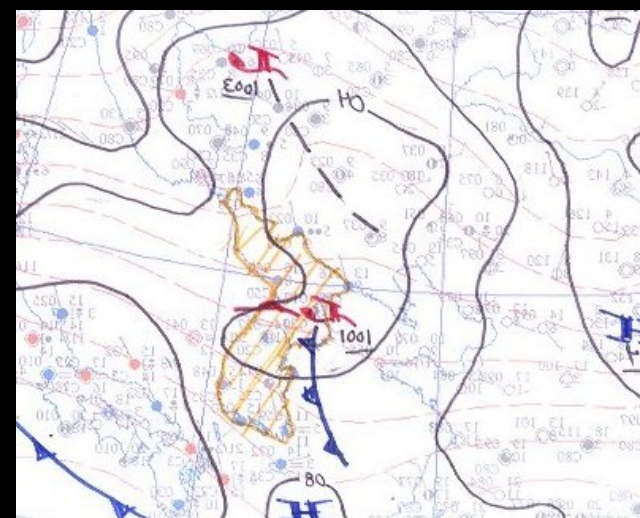
08/09Z



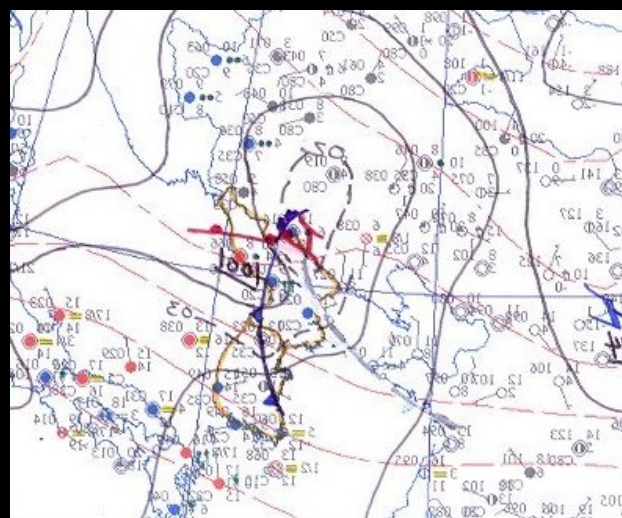
08/12Z



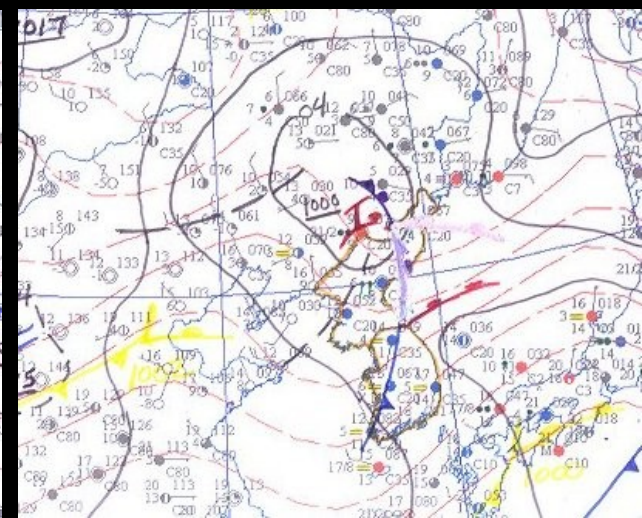
08/15Z



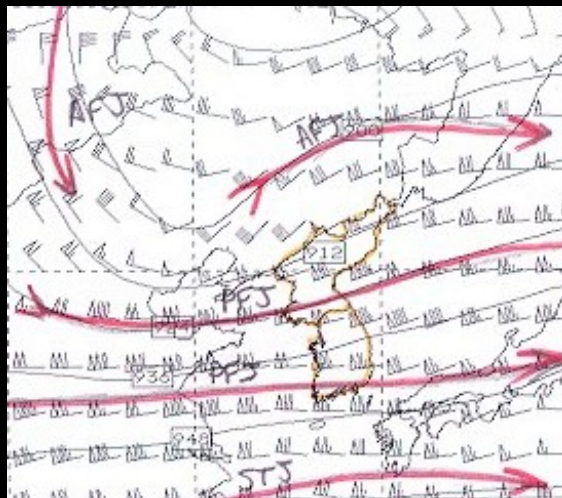
08/18Z



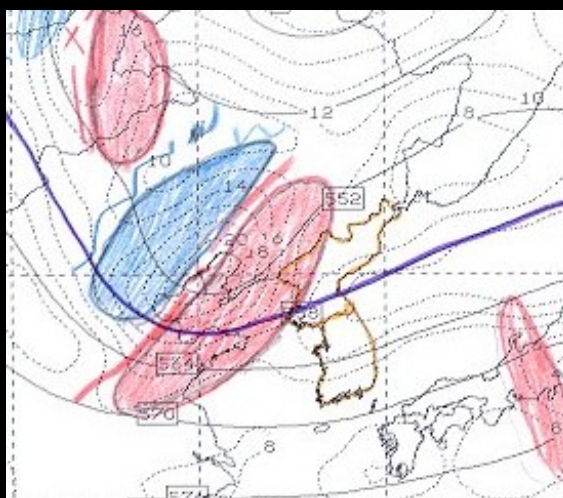
08/21Z



09/00Z



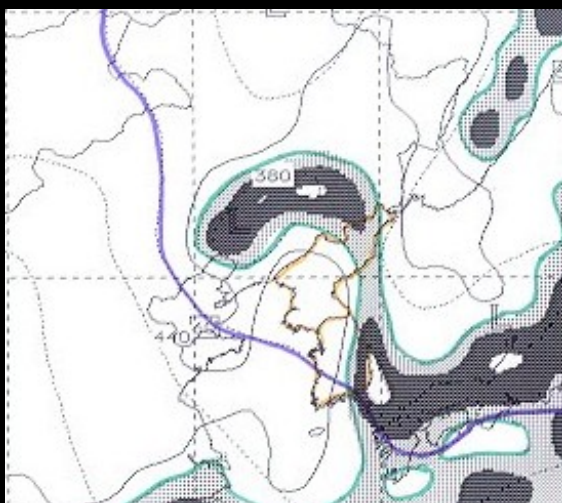
300mb



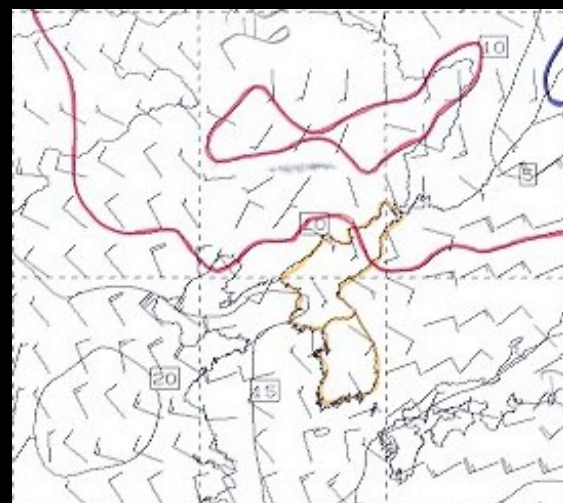
500mb



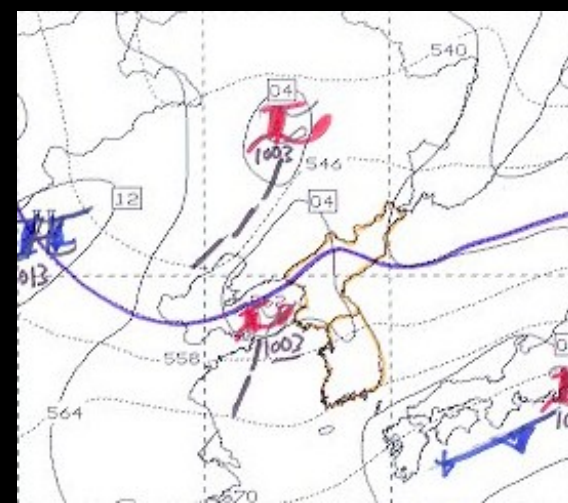
700mb



850mb

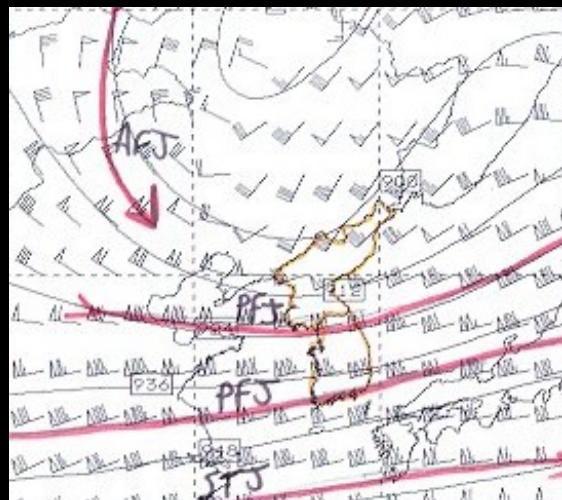


925mb

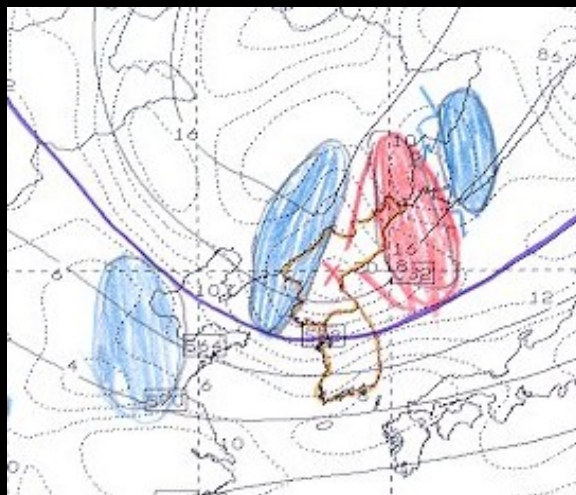


SFC

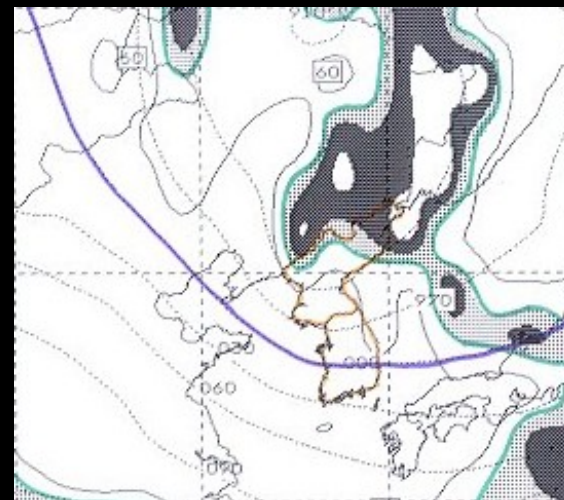
NOGAPS Analysis from 08 May 01 / 1200Z



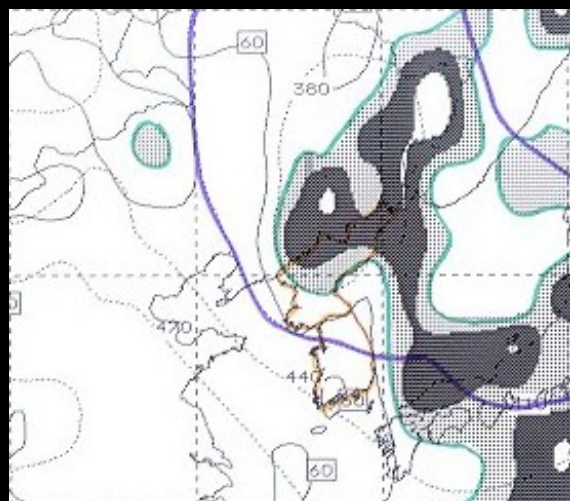
300mb



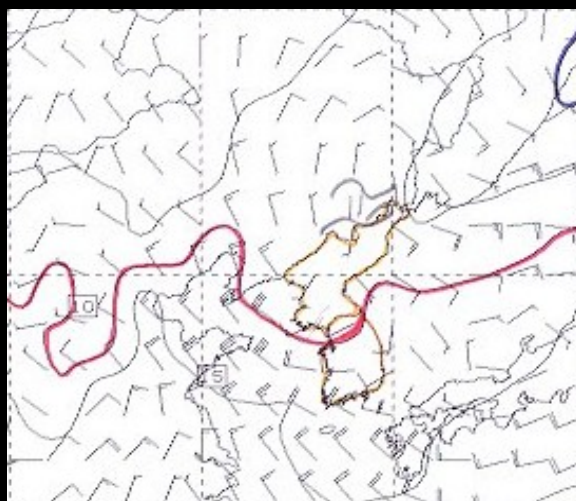
500mb



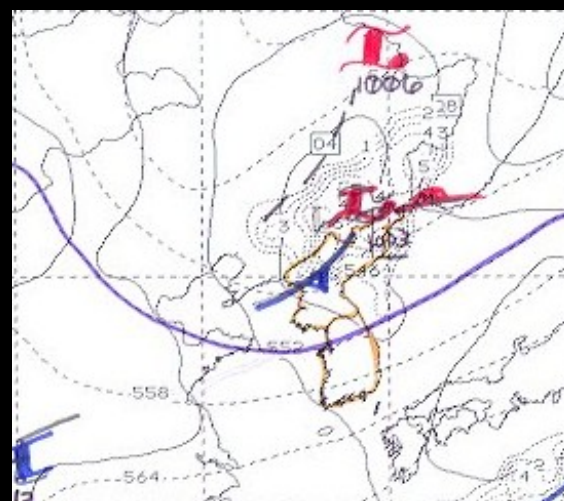
700mb



850mb



925mb



SFC

NOGAPS Forecast for 09 May 01 / 0000Z

Lessons Learned

1. May and October are the months the ROK experiences hail most frequently. Wet Bulb Zero heights are often between 7000-9000 feet, and thunderstorms are frequent. Hail watches should be issued when the potential for thunderstorms and hail exists.
2. This system moved rapidly. Metwatch must be maintained and frequency of radar checks must be increased during situations such as this.
3. Closer attention to analysis of charts, to include Skew-Ts, is necessary. Despite the synoptic situation and the ideal Wet Bulb Zero height, nothing was said about hail during early morning (0130L) METCON. Teams need to brief Skew-Ts at shift change and METCONs, and closely monitor Skew-Ts during shift when the potential exists for convective activity. Use of forecasted and upstream Skew-Ts is critical.
4. All the severe weather indicators were present (low level moisture and WAA, low level jet of 20kts, mid-level dry air intrusion, upper level CAA and strong PVA.)

Lessons Learned (cont'd)

6. Use all tools available to make hail forecasts, to include not only Skew-Ts but also model charts, MM5, radar, etc. DO NOT disregard radar alerts!! Use radar VAD wind profiles to ID low level jets.
7. Ensure TAF cell is aware of the hail threat and considers the hail threat to the locations for which they are responsible. This is not just a team chief responsibility.
8. Don't disregard any possibility of severe weather in Korea. When you do that, you've already lost out on a good forecast. Korea experiences many varied types of weather much like midwest US.
9. Closer communication is necessary among all shift positions.